The Circular Relationship Between Productivity Growth and Real Interest Rate

SUERF-OeNB Workshop: « How to raise r*? »
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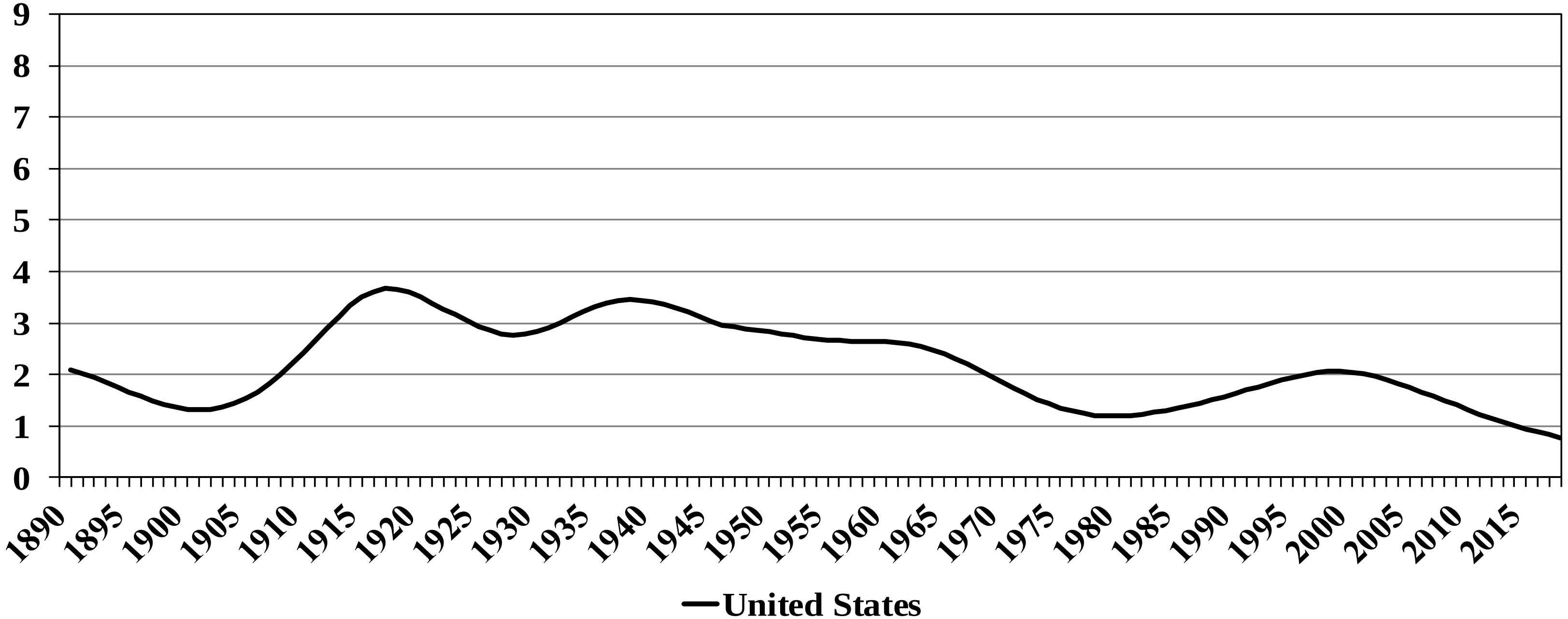
Large input from Bergeaud, Cette and Lecat (2019), BdF working paper n° 734

1. Before the crisis: A general productivity slowdown

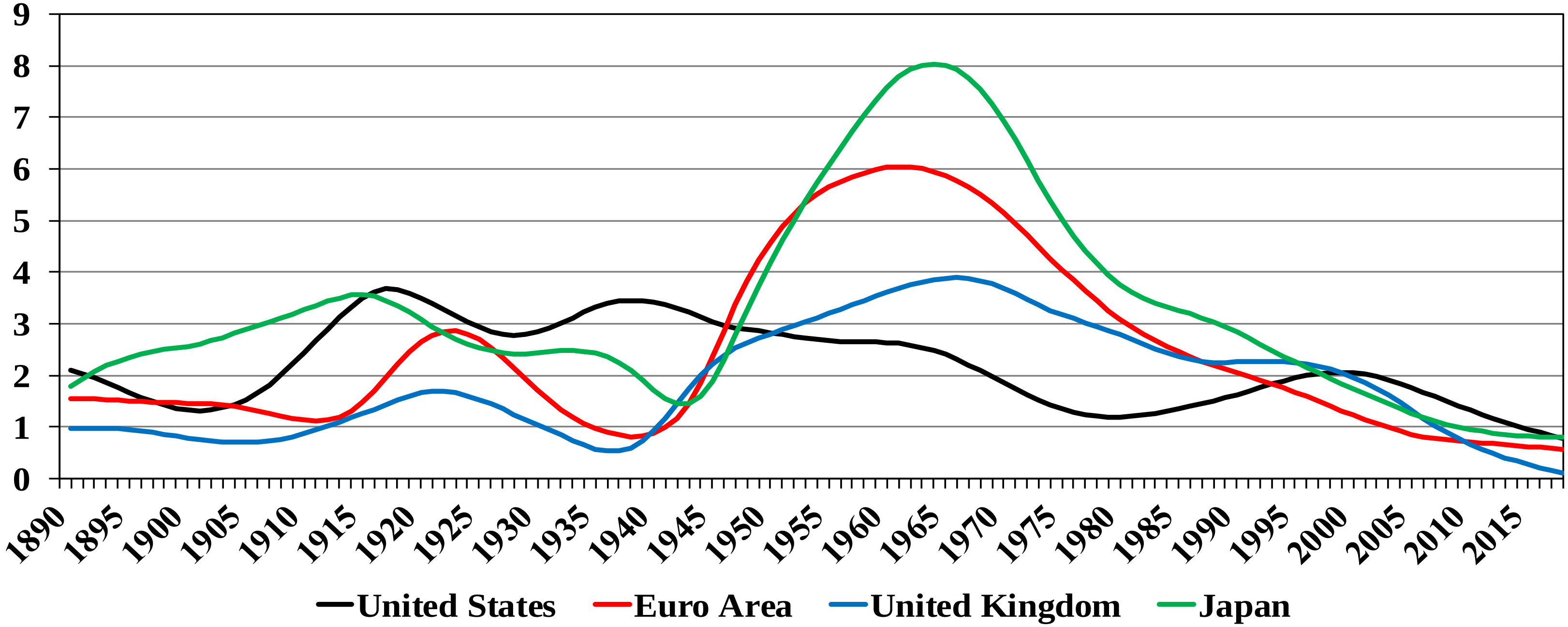
Average annual growth rate of labor productivity per hour
In the US
Smoothed indicator (HP filter, λ = 500) - Whole economy – 1891-2019 – In %
Source: Bergeaud, Cette and Lecat (2016) - See: www.longtermproductivity.com



- Productivity growth levels at the lowest
- Productivity slowdown except during the short decade 1995-2005

1. Before the crisis: A general productivity slowdown

Average annual growth rate of labor productivity per hour
In the main advanced economic areas
Smoothed indicator (HP filter, λ = 500) - Whole economy – 1891-2019 – In %
Source: Bergeaud, Cette and Lecat (2016) - See: www.longtermproductivity.com



- ○ Productivity growth levels: everywhere at the lowest outside war periods
- ○ Except in the US during the short decade 1995-2005, productivity slowdown in all areas for 4 decades
- ○ Need of common factors to explain this general slowdown
- ○ Productivity puzzle: productivity gains from digitalization are not yet s visible at the global level

2. One of the possible suspects: decreasing financial constraints

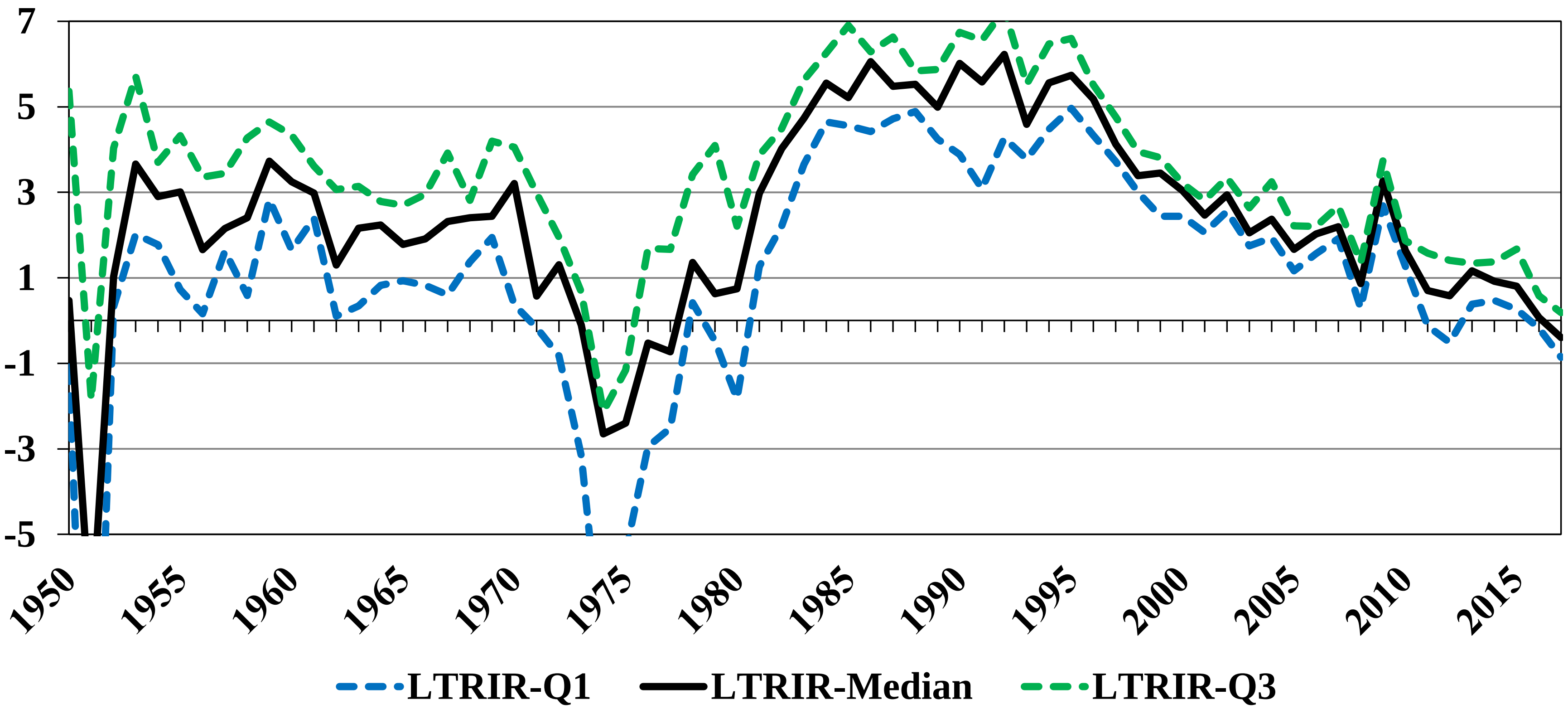
- **Numerous explanations of this productivity slowdown**
- **This long run productivity slowdown is universal**, whatever the institutions, the productivity level, the ICT and technological diffusion… **Common factors?**
- Aghion, Bergeaud, Cette, Lecat and Maghin (ABCLM, 2019) and Bergeaud, Cette and Lecat (BCL, 2020): **at least a part of the explanation could be the decrease in financial constraints**
- **The story:**
  - Decrease in real interest rates and more widely in financial constraints…
  - … Allows inefficient incumbent firms to remain on the market…
  - … May discourage potentially more efficient firms from entering the market…
  - **… Allocation (cleansing) mechanisms linked to financial constraints Increasing mis-allocation of production factors and General productivity slowdown**
- **An 'anthropogenic' circular relationship:** ↘ r → ↘ g and ↘ g → ↘ r
  - **↘ financial constraints → ↘ growth** (from productivity slowdown)
  - **↘ growth → ↘ real interest rates and ↘ financial constraints**

2. One of the possible suspects: decreasing financial constraints

Quartiles and median of real long-term interest rates – In %

10-yr government bond yields) over 17 developed countries - Whole economy – 1950-2017

Source: Bergeaud, Cette and Lecat (2019)



- Long term general decrease of real interest rates and of financial constraints
- Could be a common factor to explain at least partly the general productivity slowdown

3. Two opposite mechanisms at play

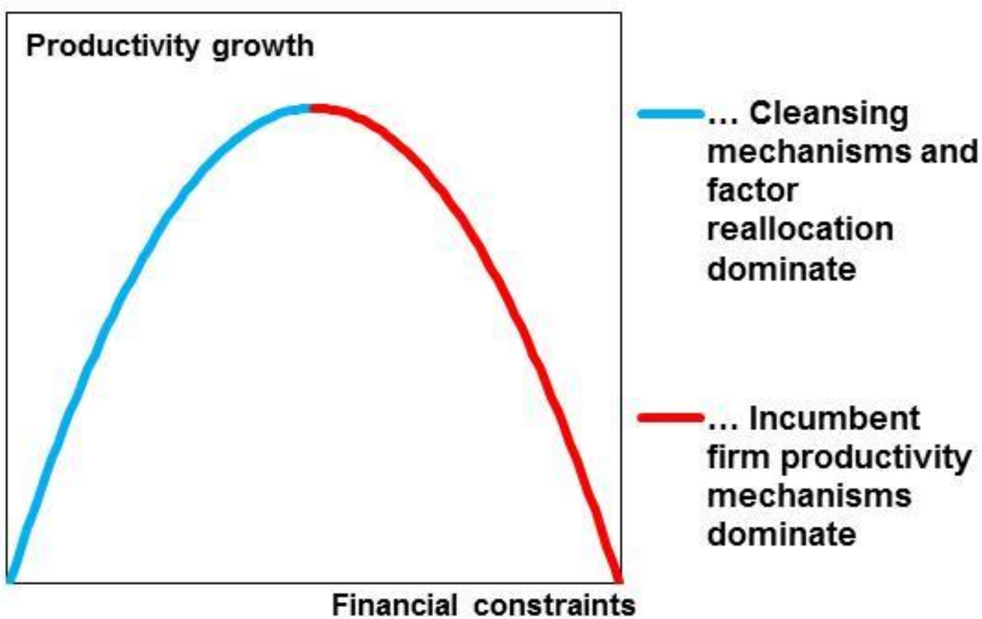
- **On individual data, results apparently contrasted in the literature regarding the impact of financial constraints/high real interest rates on average productivity growth**
  - **Favorable impact**
    Through cleansing mechanisms (closing of low-productivity firms and reallocation of their labour and capital to more productive firms)
    Gropp, Rocholl and Saadi (2017); …
  - **Detrimental impact**
    Through IT investment, R&D, innovation, management quality…
    Aghion *et al.* (2012); Duval, Hong and Timmer (2017); Manarasi and Pierri (2018); …

3. Two opposite mechanisms at play

- **ABCLM (2019) estimate these two mechanisms in a unifying framework, on a dataset of French firms**
  - Test this formally using information on productivity and credit access of French firms
  - Show that a credit easing shock has the two opposite effects:
    - It increases the productivity of the incumbents
    - It reduces the exit (the cleansing), particularly for the least productive firms
  - **Use of a natural experiment to confirm these effects**:
    - Euro area banks may use corporate loans as collateral in their refinancing operations with the ECB
    - Unanticipated annoncement at the end of 2011 of an enlargement of credit quotation to be eligible from the beginning of 2012
    - Exogenous positive shock of access to credit for numerous companies
    - Appear that:
      Default risk decreased for firms which were hit by the eligibility shock
      This effect is stronger for low-productivity firms

3. Two opposite mechanisms at play

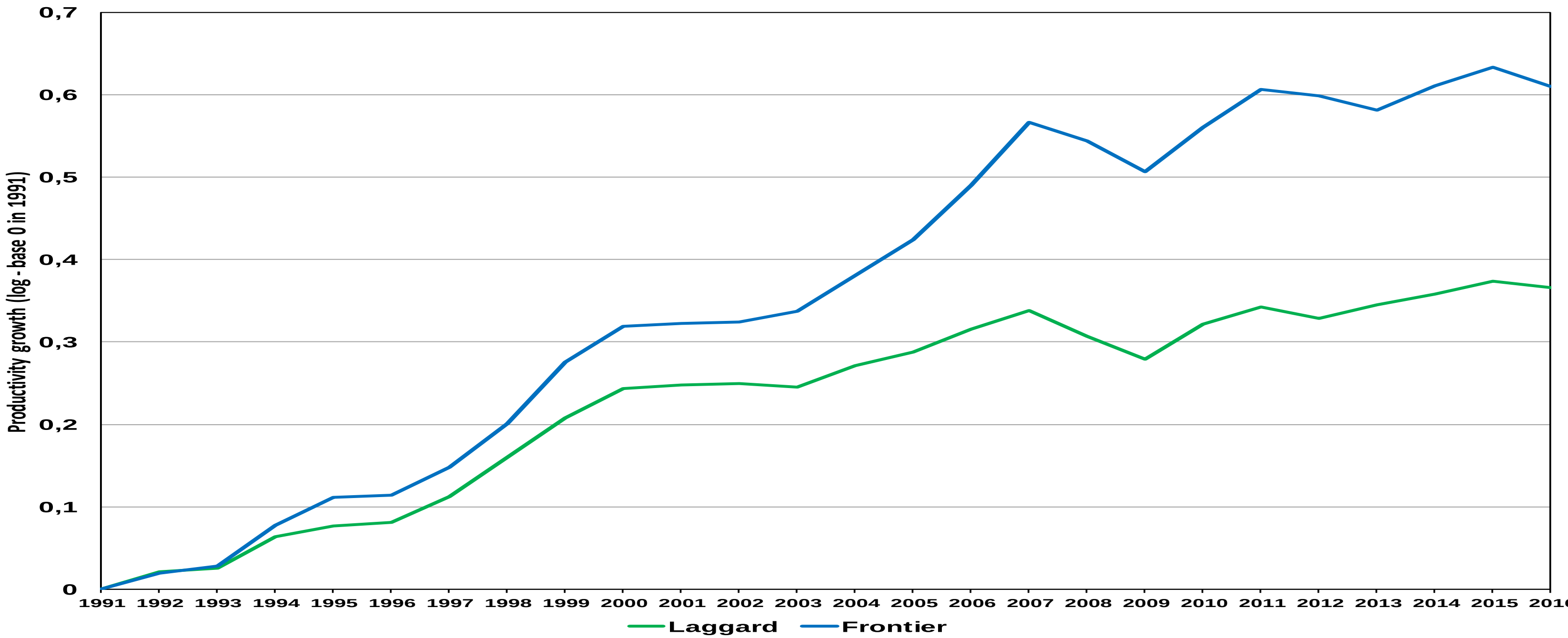
- If the two mechanisms coexist, **which one dominates currently (before the COVID crisis) at the macro level?**
- **Seems to be the first one** (favourable impact)
  See Reis (2013) ; Gopinath *et al*. (2015), Gorton-Ordonez (2015) ; G. Cette, J. Fernald and B. Mojon (2016), C. Borio, E. Kharroubi, C. Upper and F. Zampolli (2016), Bergeaud, BCL (2020), …
- **Productivity impact of financial constraints at the aggregate level:**
  An inverted U curve
  We would currently be at the left part of the curve



3. Two opposite mechanisms at play

➢ **Productivity level of the frontier firms and of the laggard French firms**

Source: Bouche, Cette & Lecat, 2019 - Large panel of French firms
Productivity frontier: Overall (cross-sectorial) fixed number of the most productive firms in each sector (10% in average of the observation number)
Median by category – log in Base 0 in 1991



○ Growing distance between productivity frontier and laggard firms
○ Allocation problem observed in France as in other advanced countries (see Andrew *et al.* 2015, 2016, …)
○ Could contribute to explain at least partly the general low productivity growth

4. What to expect from the COVID crisis in the medium term?

- **Again, two mechanims at play,** in the context of the COVID-19 pandemic:
  - **Dramatic financial constrainst decrease** from both:
    - More expansive monetary policy
    - Large fiscal support to firms
    - → Reduces the exits (the cleansing
      Symptom: huge observed decrease of firm failures and bankruptcies
    - → Negative impact on productivity growth
  - **Huge acceleration of the digitalization**
    - → Positive impact on productivity growth
- **Which one of the two mechanisms will dominate** in the medium term?
  - Open question
- **Exit strategies: two risks**
  - Not to support performant firms enough → Bankruptcies and not good allocations
  - To support unperformant firms too much and too long → No bankruptcies and bad allocation